

Translation

PATENT COOPERATION TREATY

PCT/EP2003/003930



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

|  |   |  |
|--|---|--|
| Applicant's or agent's file reference<br>2002P05753WO                                      | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |  |
| International application No.<br>PCT/EP2003/003930   | International filing date (day/month/year)<br>15 April 2003 (15.04.2003)  | Priority date (day/month/year)<br>16 April 2002 (16.04.2002) |
| International Patent Classification (IPC) or national classification and IPC<br>H04L 12/26 |   |  |
| Applicant<br>SIEMENS AKTIENGESELLSCHAFT  |   |  |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 5 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

**CORRECTED VERSION**

|   |   |
|---|---|
| Date of submission of the demand<br>10 November 2003 (10.11.2003) | Date of completion of this report<br>08 October 2003 (08.10.2003) |
| Name and mailing address of the IPEA/EP                           | Authorized officer  |
| Facsimile No.   | Telephone No.   |

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/003930

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
pages 13-12, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages 2, 2a, 2b, filed with the letter of 01 September 2004 (01.09.2004)
- ☒ the claims:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages 1, filed with the letter of 01 September 2004 (01.09.2004)
- ☐ the drawings:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 03/03930

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

|                               |        |   |     |
|-------------------------------|--------|---|-----|
| Novelty (N)                   | Claims | 1 | YES |
|                               | Claims |   | NO  |
| Inventive step (IS)           | Claims |   | YES |
|                               | Claims | 1 | NO  |
| Industrial applicability (IA) | Claims | 1 | YES |
|                               | Claims |   | NO  |

### 2. Citations and explanations

1. This report refers to the following search report citation (the reference number D1 will be retained throughout the remainder of the procedure):

D1: JONES, W.W.; JONES, K.R.: "Sequence Time Domain Reflectometry (STDR) for Digital Subscriber Line provisioning and diagnostics", White Paper [online], XP002203227

2. The application fails to meet the requirements of PCT Article 6 because the claim is not clear.

- 2.1 PCT Article 6 requires that every parameter of a claimed formula be explained.

- 2.2 It would appear from page 6 of the description that the following feature is essential to the definition of the invention:

the period of the pseudo-random generator is greater than the measuring period.

Independent claim 1 does not include this feature and therefore fails to meet the requirement of PCT

Article 6 in conjunction with PCT Rule 6.3(b), according to which independent claims must include all the technical features that are essential to the definition of the invention.

Note: If the period of the pseudo-random generator is greater than the measuring period of the power density spectrum, the transmitted signal can be regarded as the realisation of a cyclostationary random process. In other words, the redundancy of the transmitted signal can to some extent be blurred via the time and frequency directions, and the measuring bandwidth can be flexible. This is an advantage over document D1.

2.3 The phrase "second complex random coefficients" in the claim is vague and unclear, and leaves the reader uncertain about the meaning of the technical feature referred to. Consequently the definition of the subject matter of the claim is not clear (PCT Article 6). There is no mention of "first complex random coefficients".

2.4 The following features of the claims have been omitted from the description:

$$K^{(i+1)m,k} = (1 - \lambda) K^{(i)m,k} + \lambda C^{(i)m+n,k} W_g(m+n,k) [...]$$

$$S^{(i+1)\text{noise},k} = (1 - \lambda) S^{(i)\text{noise},k} + \lambda [...]$$

3. Irrespective of the aforementioned lack of clarity, the subject matter of the claim does not involve an inventive step (PCT Article 33(3)).

3.1 Document D1, which is considered to be the closest prior art, discloses a method for testing DSL lines. In D1 a sequence generator generates binary numbers

by fast Kronecker autocorrelation; the received signal and the transmitted signal are correlated, and the output signal is processed in order to determine the physical parameters of the line.

3.2 It is not known from D1 to use random signals and to perform a two-dimensional discrete Fourier transform.

3.3 A person skilled in the art would regard all the claimed features as conventional procedures. The subject matter of the claim therefore does not involve an inventive step and thus fails to meet the requirement of PCT Article 33(3).